CBX Multiservice Edge Switch Portfolio

Evolve the multiservice edge to increase the profitability of existing and new services and reduce total cost of network ownership.

Benefits

- Maximize profitability and flexibility to grow existing services and add new, high demand services
- Efficiently converge and interwork multiple services across an IP/MPLS core while preserving QoS and SLAs
- Deliver all services with unprecedented, proven carrier-class reliability, availability, and performance
- Simplify network management and reduce operating costs with Navis® network management software

Lucent Technologies
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Lucent has extended the proven leadership, carrier-class reliability, and performance of its multiservice switch family to meet the demanding requirements of the evolving multiservice edge. The CBX Multiservice Edge Switch portfolio includes two scalable switching systems that have been carefully designed to deliver flexible, high-performance services from a compact edge platform. This portfolio includes the:

- **CBX 3500™ Multiservice Edge Switch:** The newly-architected 70 Gbps, 16-slot CBX 3500™ switch provides maximum service flexibility and port density at a dramatically reduced cost per port to increase the profitability of Layer 2 services, add new services, and converge and interwork multiservice traffic onto an MPLS core.
- **CBX 500® Multiservice WAN Switch:** The widely-deployed 5 Gbps, 16-slot CBX 500® switch provides the multiservice capabilities, high-speed trunking, proven reliability, and high port density you need to cost-effectively aggregate Layer 2 and Layer 3 edge services.

The CBX portfolio helps service providers optimize data service delivery to expand revenues and lower capital and operating expenses. The CBX switches help maximize profits from Frame Relay, ATM, and private line services and reduce costs by transporting all services over MPLS with robust QoS. Service providers can also use the switches to generate new revenue from differentiated IP/MPLS and Ethernet services, such as Layer 2 and Layer 3 Virtual Private Networks (VPNs), IP-enabled Frame/ATM, and Ethernet Virtual LAN (VLAN) services.

With high port densities, a wide range of service interfaces, and superior software and hardware fault tolerance, the CBX switches deliver all services with the availability, QoS, and performance end users expect. The CBX portfolio is managed by the Navis® network management system, which enables streamlined operations to speed service provisioning and control costs.

Maximize profitability and flexibility to grow existing services and add new, high-demand services

High-port densities and efficient switching architectures enable the CBX switches to cost-effectively deliver ATM, Frame Relay, IP, MPLS, and Ethernet services at speeds ranging from DS0 to OC-48c/STM-16c. Service providers can also minimize costs and protect existing investments by sharing line modules within the CBX portfolio.

The CBX 3500™ Multiservice Edge Switch further reduces costs by incorporating the latest Network Processing Unit (NPU), mesh, and power distribution technologies into its innovative switch design. The new architecture also includes Universal I/O modules to increase service flexibility while minimizing equipment costs.

Efficiently converge and interwork multiservice traffic across an IP/MPLS core while preserving QoS and SLAs

Service providers can deploy either CBX switch as part of a Lucent-Juniper Multiservice MPLS Core Solution to transport edge services using high-speed ATM interfaces and ATM-over-MPLS trunking. This solution uniquely delivers all services according to ATM QoS and service level agreements (SLAs), without sacrificing network reliability. Alternatively, service providers can use high-speed Packet over SONET (POS) interfaces and pseudowire emulation edge to edge (PWE3) on the CBX 3500™ Multiservice Edge Switch to transport services across any standards-based MPLS core.

Lucent was the first to deploy automated ATM-over-MPLS trunking, which it uses in the Lucent-Juniper Multiservice MPLS Core Solution to transport Layer 2 services over MPLS. Today, Lucent and Juniper are leading the effort to develop ATM-to-MPLS control plane interworking and any-to-any Ethernet-ATM-Frame Relay service interworking standards to increase the utility of future ATM-over-MPLS and L2 interworking solutions.

Deliver all services with unprecedented, proven carrier-class reliability, availability, and performance

The CBX portfolio has been designed to provide carrier-class reliability and availability. CBX switches feature fault-tolerant architectures, reliable Lucent MXOS™ Multiservice Switch Operating Software, and performance monitoring to help service providers deliver premium services to business customers. The CBX 3500™ Multiservice Edge Switch is built on the proven heritage of the CBX 500® and GX 550® Multiservice Switches, which have been field-tested and hardened in the world's largest service provider networks.

Fault tolerant architecture maintains services through almost any failure

- **Redundancy protection for key modules:** N:1 protection for the CBX 3500™ Universal Input/Output Module and 1+1 Automatic Protection Switching (APS)/Multiplex Section Protection (MSP) on SONET/SDH interfaces help support non-service impacting upgrades and protect against card failures.
- **Routing and signaling protection:** Distributed routing and signaling control help avoid single points of failure. If a network or service disruption occurs, priority-based routing of hundreds of thousands of circuits per second quickly restores services.
- **Reliable architecture:** Fully redundant hardware, control, and power components protect against hardware failures and reduce network downtime. If a failure occurs, automatic failover, Stratum 3 holdover timing, and hot-swappable modules can restore services quickly without losing data.

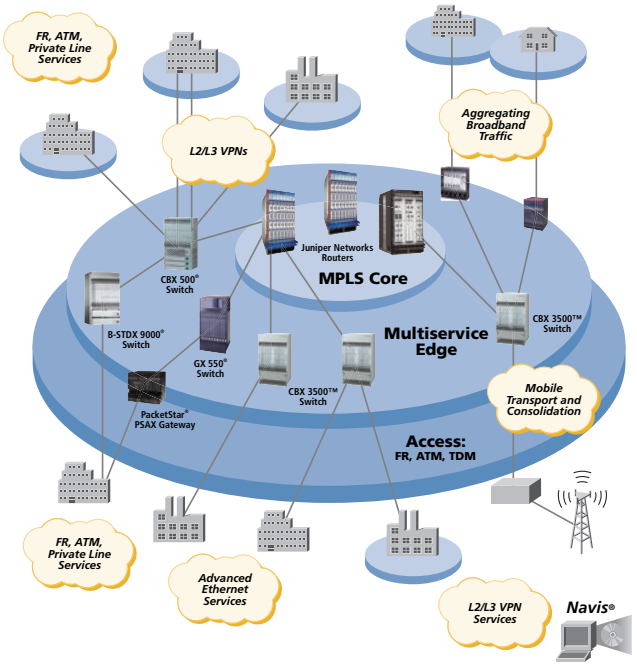
MXOS™ software provides unparalleled reliability, service flexibility, and investment protection

An integral part of the high-performance CBX portfolio architecture, MXOS™ software leverages Lucent's expertise in voice networking and the Virtual Network Navigator® (VNN®) routing platform to deliver voice-level reliability. The carrier-class MXOS™ operating system features network analysis tools and non-service impacting upgrades to quickly identify problems and help prevent service disruptions. At the same time, MXOS™ software provides the standards-based Private Network-to-Network Interface (PNNI) support needed to preserve the VNN® operating environment while ensuring interoperability with other carrier networks.

Together, the hardware and software enable the CBX portfolio to deliver unmatched, field-proven carrier-class reliability to ensure SLAs and improve customer satisfaction.

Simplify network management and reduce operating costs with Navis® network management software

The CBX Multiservice Edge Switch portfolio utilizes the same integrated Navis® platform that already maintains Lucent multiservice networks. Navis® software uses industry-standard protocols to seamlessly manage services across all Lucent multiservice switching products. With exceptional



The Lucent CBX portfolio optimizes data service delivery to expand revenues and lower expenses.

service provisioning, fault management, and performance monitoring for all Lucent networking nodes, Navis® helps service providers deliver new services quickly and profitably. With the cohesive Navis® network management platform, service providers can capitalize on CBX portfolio benefits, while eliminating retraining expenses and lowering overall operating costs.

Navis® delivers:

- Multiservice, multivendor management from a single platform
- Sophisticated applications with add-on functions such as SLA and real-time statistics monitoring
- Extensive configuration, performance management and security support
- Point, click, done provisioning

The comprehensive Navis® platform includes end-to-end service management, policy administration, and Operations Support System (OSS) integration for equipment spanning multiple network layers. Service providers can use Navis® to provision, operate, manage, and deliver services over the entire suite of multivendor Layer 1, Layer 2, and Layer 3 network equipment.

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Key Benefits:

- Grow profitable services and add new revenue-generating services
- Evolve and leverage existing multiservice network infrastructure to cost-effectively meet network convergence requirements
- Retain exceptional, leading carrier-class network characteristics
- Maintain Navis® management platforms to simplify operations and reduce operational expenses

CBX Portfolio Service Applications

Frame Relay access services

– Standards-based ATM to Frame Relay network and service interworking

– Enhanced services support through Multilink Frame Relay (MFR) and Subrate DS3 Frame Relay

ATM transport and access services

– QoS for all multiservice traffic

– Enhanced services support through Inverse Multiplexing for ATM (IMA)

– Private line/Circuit Emulation (CE) services

– Private Network-to-Network Interface (PNNI)

Aggregating broadband traffic

– DSL and cable modem traffic

MPLS L2 VPNs

– Utilize Packet over SONET to connect Enterprise ATM/ Frame endpoints

– Pseudowire emulation edge to edge (PWE3)

Transport multiservice traffic over an MPLS core

– Lucent-Juniper automated ATM-over-MPLS trunking using ATM

– Standards-based L2 transport over MPLS (PWE3) using POS

– Maintain ATM OAM, QoS, connection setup rates, TM, and reliability

– PNNI, VNN® support

Any-to-Any L2 VPN with GigE

– Virtual Private LAN switching support (2 levels)

– Service interworking of Ethernet with FR or ATM, over ATM or MPLS core

L3 IP VPNs

– IETF RFC2547bis

Specifications are subject to change without notice. Contact your Lucent representative for information on availability and upgrades. Lucent reserves the right to change, modify, transfer or otherwise revise this publication without notice.

To learn more about our comprehensive portfolio, please contact your Lucent Technologies Sales Representative, Lucent Business Partner or visit our web site at http://www.lucent.com/solutions/core_switching.html.

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